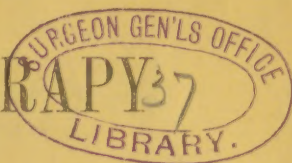


CHAILLÉ (S. E.)

THE CLIMATOTHERAPY³⁷



OF, AND THE

American Mountain Sanitarium

FOR

CONSUMPTION.

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Professor of Physiology and Pathological Anatomy, Medical Department, University of Louisiana.

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The influence of climate in the treatment and prevention of consumption has been recognized from the earliest times; yet, though many errors have been corrected, the problem is still far from having been thoroughly and satisfactorily solved. No such solution can be hoped for until additional researches have furnished the data indispensable for absolute conclusions. The premises now lacking for such conclusions are to be sought for in a full knowledge of the various morbid processes still classed under the single title of Consumption or Phthisis Pulmonalis—and in an equally full knowledge of the Vital Statistics and Meteorology of every section of the earth's surface. Those who have most studied the subject are also those who are best convinced that climatotherapy is still in its developmental stage; and that pathologists, vital statisticians, meteorologists and hygienists have enormous labors to accomplish, before the physician can hope to realize from the influences of climate on disease the immense benefits destined to be secured.

A glance at the causes now at work to promote this desirable result is calculated to inspire hope. Among these promoting causes, none are more potent than those universal civilizers

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and humanizers, steam and electricity, which are daily increasing our knowledge of every inhabited nook of the globe. Within the past thirty years, the foremost nations have developed some appreciation of the social and political importance of vital statistics and meteorology, and there are hopeful evidences that, while the most civilized States are nurturing the seeds of this still inadequate appreciation into matured fruit, the less civilized will be awakened to some realization of the importance of the subject. An additional encouragement is found in the increasing conviction of the profession, that the physician, in the discharge of his duty to patient and society, must keep in mind that "air, water, and locality" deserve from him, as they received from Hippocrates, primary consideration; and that therapeutics must depend more and more on hygiene. Finally, the rapidly growing literature of the subject, the publication at Leipsic of a *Quarterly Journal*, and at Vienna of a *Year-Book*, especially devoted to it, forcibly indicate that potent causes are in operation to solve our doubts and perfect our knowledge of climato-therapy.

With little lore or practical experience in the subject, I still venture to call attention to some of the results of modern researches upon the influence of climate in consumption.

One need not have become gray-haired in the profession to recall the period when it was generally taught that mild and uniform climates, even tropical seashores, as Madeira, Florida, Cuba, etc., were those best adapted to consumption, and that malarial regions were especially favorable. These beliefs were so generally and firmly established, that, though long since proved erroneous, physicians are still to be found who credit them. Statistics have proved that warm countries exercise an unfavorable influence on consumption, tropical countries the worst, and that as a general law the disease diminishes as we pass inland, to the north, and from the low to the high lands.

The delusion that malaria acts favorably on consumption, is practically important especially to the inhabitants of malarial regions, and deserves constant refutation until wholly abandoned. It owes its existence, in this section of the United States, to a misinterpretation of the fact that in our southern cities the proportion of annual deaths to the total annual deaths by consumption is generally less than in the northern cities. This fact is indisputable, and its misinterpretation not

less so. This misinterpretation is due to failure to compare the total number of annual deaths of these respective cities with each other; and to ignorance of the fact that the test of the mortality by any given disease in a given place is to be found in the proportion of the annual deaths by said disease *to the total population*, and *not to the total deaths*. The reader can free himself permanently from this source of serious and oft-repeated errors, if he will carefully digest the following illustration: In 1873 New Orleans had 200,000 population, 7505 deaths, and 850 of these were by consumption; while the same figures for San Diego Co., California, were 9000 population, 53 deaths, and 13 by consumption: now if the comparative mortality by consumption in these two places be tested by the delusive ratio of consumptive deaths to total deaths, then New Orleans lost only about 11 in every 1000, while San Diego lost about 24; and hence the hasty and absurd conclusion that New Orleans was more than doubly as favorable to consumptives as San Diego: but, if the true test be applied—the ratio of consumptive deaths to population—it will be found that in San Diego there died by consumption only $1\frac{1}{3}$ persons to every 1000 population, while in New Orleans more than four of such deaths occurred; and hence the true and indisputable conclusion, that three times more people died in New Orleans by consumption than in San Diego. Those who cannot master such simple arithmetical premises and conclusions—and there seem to be a good many of these unfortunates—are strenuously urged to eschew statistics altogether and forever.

Abandoning the consideration of long-credited errors, and reserving the consideration of the important influence of altitude on consumption, some of the general conclusions which seem to be well founded may now be stated. It is conceded that in cases far advanced no benefit can be expected from change of climate, and that our ignorance of the climatic requisites is such, that an aggravation of the symptoms ensues as frequently as their amelioration. It is as fully conceded, that in the early stages, and above all as a prophylactic, when the dreaded disease is threatening invasion, the influence of climate is pre-eminent in arresting it—generally prolonging life, often fully restoring health. It is also agreed that there is no one climate good for all cases and stages of consumption, and that the climate good for a given case in summer is often not good for

the same case in winter; and that even the inclination, tastes and habits of each patient should be consulted, for his contentment and happiness seriously influence his health.

It has been found that all nomadic tribes are remarkably exempt from consumption, while the pernicious influence of incarceration, inadequate ventilation, and deprivation of sunlight has been repeatedly illustrated upon caged animals, and most disastrously in the jails, ships, and barracks of human beings. In consumption, a life of exercise in the open air is essential to salvation. The seasons and places noted for sudden and frequent meteorological changes, or other conditions which confine the patient to the house, are the worst; and (other things being equal) those places are the best, where life out-doors is permissible to the greatest extent. Another important indication, in determining for each case the change of climate desirable, is to be derived from the consideration of the season and weather, which have been observed to exercise the best influence upon his general health and his special disease, and particularly upon his digestive, nutritive, and respiratory functions. The climate most appropriate for the case in hand is likely to be the one which presents these conditions. Thus Dr. Bennett, of England, has obtained in his own case, the most successful results by travelling for years with "a thermometer in his pocket" to control his constant changes of temporary residence. With an hereditary tendency to the disease, the writer's general health has always been most vigorous when the weather has been cold, the air dry, and the atmospheric pressure diminished; therefore if threatened with consumption, I should promptly and unhesitatingly remove to a climate which furnished these conditions.

Dr. C. T. Williams, in his Lettsomian Lectures upon "The Influence of Climate in the Treatment of Pulmonary Consumption," recently published (1876) in the *British Medical Journal*, states the following results of his statistical researches, which are particularly thorough as to the health-resorts of England: "A bracing though gusty climate avails more than a mild, still, and somewhat relaxing one; and instead of seeking for a sedative atmosphere to allay the cough and reduce irritability, we should in most cases select a stimulating one to increase the appetite, and to invigorate the system of our patients." Parkes, in his admirable work on Hygiene, states: "I have been astonished to

find how well even phthisical persons will bear great changes of temperature if they are not exposed to moving currents of air."

Dr. Williams also asserts, that "in all forms and degrees of phthisis the dry climates are the most likely to arrest the disease," and "for the ordinary forms of consumption, a dry air, whether inland or marine, is better than a moist one, inland or marine, cold or hot." While many authorities concur in the superiority of dry to moist air, there are none the less some who assert with equal positiveness the reverse. In fact the evidence on this point is conflicting, and this is no doubt due in part to the fact that humidity is a relative term, and that the degree of humidity has not been studied nor stated with sufficient precision. The force of authority is strongly to the effect, that while a relatively dry atmosphere is the best for consumptives, yet that neither excessive humidity nor excessive dryness of air are favorable; and that very damp air, if cold, is markedly unfavorable. In this connection, allusion must be made to the recent [since 1860] valuable researches of Bowditch, of Mass., and Buchanan, of England, on the influence of subsoil drainage in producing consumption. It has been satisfactorily proved that dampness of the soil, from which aerial humidity must result, is an important cause of phthisis to the population living on such a soil; and that the prevalence of the disease can be and has been notably diminished simply by attention to the proper drainage of such wet soils. Even prior to these satisfactory researches, the fact was recognized that sandy, porous soils exercised a better influence than the alluvial, impermeable ones.

While not my purpose to discuss the influence of diet in consumption, there are some prominent facts which cannot be avoided even in a discussion solely of the influence of climate. For instance, all agree that whatever be the climate, the introduction and assimilation of the largest quantity of nutritive food is of the utmost importance; and many are disposed to ascribe the happy influence of certain climates solely to their beneficial effects in promoting digestion and nutrition. Others claim that the favorable results obtained in certain places are directly dependent, not on any peculiarities of their climate, but on the peculiarity of their diet. For instance, Iceland, the Faerøe Islands of Denmark, and the Kirghiz-Steppes of southeastern Siberia, enjoy, it is said, an absolute immunity from consumption. The nomads of the first feed especially upon fats and oils, of the

second upon fish, and of the last upon koumiss or fermented mare's milk, and to these peculiarities some would attribute their immunity. It is certain that professional experience throughout the world testifies favorably to the benefits of fish oil, and that the Russians have introduced and advocate the use of koumiss. The milk-whey, skimmed milk, and other such dietetic cures, deserve remembrance in this connection. It also deserves to be noted that all of these peculiar diets are carbonaceous; and further, that some of the regions, as the Steppes of Tartary, said to enjoy an immunity from consumption, are below the level of the sea.

Among the several climatic factors which favorably influence consumption, there is no one of them of such preëminent importance as altitude, no one of them in regard to which professional opinion is so strongly and unanimously expressed. Though long known, that Quito and some other mountain cities were exempt from this disease, the knowledge is comparatively recent that these special facts indicated the general law that high altitudes, in whatever country found, enjoyed a like exemption. If the investigator climb high enough—whether the Andes of South America, the Sierra Madres of Mexico, the Rocky Mountains or Apalachians of the United States, the Alps or Apennines of Europe, or the Himalayas of Asia—the altitude can be found where consumption is unknown, and where the threatened victim of the lowlands can gain such health and prolongation of life as neither doctors nor drugs could secure him.

What is this health-giving altitude? No fixed numbers measure it; varying with different circumstances, it may be found in one place at 2000, and in another at not less than 8000 feet above the level of the sea. What are the different circumstances which cause these variations? All are not known, some will be stated. Latitude has a notable influence, for the further south the higher the desired altitude. Jourdanet thinks that it is generally to be found half way between the ocean's level and the altitude of constant snow; but this is believed to be an over-estimate, though a safe one. The desired altitude is higher on mountains near the coast than on those farther inland; even on the latter it must be sought for higher on peaks on the border of, than on those more centrally located within such mountainous regions; and even in this case it is found higher in mountain valleys hemmed in by adjacent peaks than on an ex-

posed mountain's top or plateau. Humidity modifies the altitude; and since forests, as also the nature of the soil and its drainage, modify the hygrometric condition of the air, therefore these affect the question of altitude. It is not doubted that there are other modifying causes, as yet inadequately understood; those given should suffice to warn against a hasty conclusion as to any special place, from considering the sole fact of altitude exclusive of other important conditions.

On what do the benefits of altitude in consumption depend? On this point authorities are not in accord, but it is safe to say that these benefits must depend upon the climatic differences between the mountains and low lands generally. On mountains the variations of temperature, from summer to winter, from day to night, have a smaller range than on sea-levels; and as the smaller range of these variations is less in southern than in northern altitudes, it is said that lofty tropical altitudes are the best. It is also said that there are generally more clear days on mountains, especially in the winter, hence greater encouragement to life in the open air, and therefore the important benefits which result from such a life. But the three most important characteristics of mountain climates are the greater purity, dryness, and rarefaction of the air. The prime importance of atmospheric purity in the prevention and treatment of consumption is fully recognized, and has already been referred to, as has also been the importance of dryness of the air. The influences of diminished aërial pressure—the only characteristic peculiarity of mountain-climates—remain to be considered, it being prefaced that this subject has not yet been sufficiently studied, and is not thoroughly understood.

In a rare atmosphere the respirations become more frequent, attempting (it is asserted, ineffectually) to compensate for the diminished quantity of oxygen: they also become more ample, owing, at least in part, to the diminished aërial pressure, both on the thoracic parietes, whereby less resistance is opposed to the inspiratory expansion; and on the inner surface of the lungs, whereby greater play for the expiratory elastic recoil of the air-cells is permitted.

This greater respiratory activity, increased both in frequency and amplitude, reacts—as respiration by anatomical and physical necessity must always do—on the heart, and thereby greater force and rapidity is given to the circulation. While the general cir-

culatation is thus rendered more active, the diminished pressure on the surface of the body tends to increase the peripheric capillary circulation. The increased activity of the circulation is supposed to be beneficial in consumption, and does probably explain, at least in part, the well-established fact that mountain climates unfavorably influence diseases of the heart.

Prof. Paul Bert, whose physiological experiments on the influence of barometric pressure deserve the utmost consideration, confirms Jourdanet and others in the assertions that, the less the atmospheric pressure the less the quantity of oxygen in the blood, and the less the amount of carbonic acid and other products of oxydation; but, the freer becomes the exosmotic excretion of such amount of these oxydized products as are formed in the economy. Bert asserts farther, that asphyxia can be produced by diminution of the aërial pressure or tension, even though oxygen be introduced into such tenuous air in disproportionate and superabundant amount. This diminution of the oxygen, in the air and the blood, is termed by Jourdanet a "respiratory diet," and in it he finds satisfactory explanation for the immunity from phthisis in high altitudes. Lombard urges that a "carbonic plethora" is produced by the diminished oxydation, and in this seeks to find a common explanation, both for the benefits conferred by altitude, and for those derived from the various carbonaceous diets. Lombard calls attention to other striking and instructive facts, viz., that the physical and chemical influences of rarefied air, which cause exemption from phthisis, are noted for producing emphysema; that emphysema, however produced, is antagonistic to consumption, that the former is apparently a natural means for curing the latter; and that a physician who seriously proposed to relieve the one by artificially producing the other was by no means deserving of ridicule.

Since rarefaction of the air, whatever may be its other effects, does facilitate the exosmosis of the liquids and gases of the body, it must tend to promote appetite and nutrition. Farther, the dryer as well as rarer the air, the more active is evaporation; and as this process withdraws heat as well as fluids from the body, it necessarily increases the demand for supplies of food. By such considerations it can be explained why altitude increases respiration, circulation, appetite, and the nutritive processes generally; and yet, I think it must be admitted, that there is too much vague generalization about all this to

explain satisfactorily the admitted fact that altitude does exercise a special influence on those special morbid processes designated as consumption. Therefore be it understood, that I have cited the supposed facts as to the influence of rarefied air, not because entirely satisfactory to me, but in order that the reader might be as fully informed as my own inadequate knowledge permits me to render him.

Though causes be obscure, results must be admitted. Germany, in science the pioneer of nations, has been the first to make a practical application of the facts stated by establishing, as early as 1854, a mountain sanitarium for pulmonary diseases. The success which followed encouraged the foundation of others, and not less than five are now in successful operation, viz., at Goebersdorff, Prussia; Reichenhall, Bavaria; Aussee, Austria; and at Davos, and St. Moritz, Switzerland. The English have sanitarium in the Himalayas, the Italians in their mountains, and some exist in the Peruvian Andes. Dr. Williams gives the warning that the Alpine and Andean sanitarium supply such wretched food that they do not deserve patronage, until they learn to furnish that essential in the treatment of consumption—an abundant, well-cooked, and appropriate diet.

The facts now stated indicate how much more highly climatothrapy and mountain sanitarium are appreciated in Europe than in the United States. But American enterprise in the practical application of knowledge is unsurpassed, and as accessibility to our mountain regions increases annually, it is believed that it will not be long before the profession and the public will awake to the importance of providing fit mountain resorts, especially as preventives against consumption, a disease which causes one-eighth of all our deaths, and annually destroys about three in every thousand of our population.

Before considering the advantages which the United States possess in this regard, it may prove instructive to state that Central Asia (Thibet) possesses the loftiest and grandest mountain plateau in the world; 160,000 square miles in extent, at an altitude of from 10,000 to 15,000 feet. What a field for future climatotherapeutic research! Our southern neighbor, Mexico, deserves careful study, and inspires great hope by its possession of the glorious table land of Anahuac, from 6000 to 9000 feet above the sea, in which the City of Mexico sits enthroned at an

altitude of 7400 feet, and Popocatepel raises its snow-clad head 17,716 feet. If tropical altitudes be, as is asserted, the most favorable to consumption, then Mexico must become in the future a noted resort for wealthy American victims to this disease.

The United States possesses two sections of country worthy of special study in this connection. The "Great Basin of North America," between the Rocky and Pacific Mountains, consists of 150,000 square miles of *table-lands and plateaus, which range from 4000 to 5000 feet above the sea, and shoot from their bosom snow-clad peaks which mount skyward from 10,000 to 17,500 feet. From this section most favorable reports have come. Among others, Dr. S. E. Solly reports that Manitou, which abounds in valuable mineral springs, has proved to be highly beneficial to the incipient stages of consumption. It is situated at an altitude of 6370 feet, and yet is 8000 feet below the adjacent summit of Pike's Peak. It is within 5 miles of the prosperous town, Colorado Springs, and is 75 miles south of Denver, Colorado. It possesses five hotels, but no sanitarium is reported. Dr. Solly writes that "there is probably no climate in the world where out door life is so thoroughly enjoyable through every season of the year as that of Manitou;" that the popular reputation of the climate has been injured (as, by-the-by, is the usual case with the mountain sanitarium for consumption) by the flocking of patients to it without discrimination or selection; and that the death of those suffering with extensive and progressing cavities has been often accelerated by the great and sudden change from the lowland to this climate. He reports, in addition, the following facts, which I specially cite because they are confirmatory of the experience of others as to the influence of high latitudes: that there is total exemption from asthma, while emphysema and heart disease are aggravated; and that, contrary to what has been heretofore supposed would be true, the hemorrhagic cases of the disease are especially benefited, and that consumptives improve to the greatest extent particularly during the winter.

Another mountain region of the United States, the various

* Table lands are elevated regions of generally even surface. Plateaus are elevated regions of uneven, rugged surface, often with mountain peaks jutting from them. Steppes are the immense desert plains of Russia and Siberia, somewhat similar to our great Prairies.

ranges and plateaus of our eastern Apalachians, not only deserve consideration, but our first study and chief interest, because of its greater accessibility and proximity to our chief centres of population. As the highest peaks rarely exceed 6000 feet, while the average height of all the peaks is not more than 2500 feet, and the plateaus are still lower, the Apalachians fail to arouse as sanguine hopes as their loftier and grander western brothers. But there are the best reasons for believing that many places will be found reaching an altitude sufficient to secure immunity from consumption, and therefore suitable for its treatment. The Apalachians attain their most lofty, rugged, and striking development in western North Carolina, where, between those two off-shoots the Blue Ridge and the Alleghanies, are to be found the fourteen peaks which constitute the Black Mountains. All of these exceed 6200 feet, and the highest (Mt. Mitchell) reaches an altitude of 6707 feet, rendering it the loftiest summit east of the Rocky Mountains. But these monarchs of the east are not alone in their grandeur, for in this same region are to be found the Great Smokey, the Unica, the Bullhead, the Saluda, the Craggy, and the Roan Mountains, which present (according to Prof. Guyot, of Princeton) not less than thirty-six additional peaks which exceed 6000 feet in altitude. Having visited the Swiss Alps, and all the noted mountain ranges of the United States from Labrador to the Gulf of Mexico, the writer does not hesitate to testify that there is no mountain region in the eastern United States which equals in beauty and grandeur this sublime section of North Carolina, which roughly may be said to be embraced in a circle having Asheville as its centre, and with a radius of about 40 miles. A scientist, long engaged in the official exploring expeditions of the Rocky Mountains, stated last summer that he was but little less impressed by the lofty, graceful, diversified, and imposing appearance of these noble mountains, than by the higher peaks of the great giants of the West.

In this region, between the Blue Ridge on the east and the Alleghanies further inland, is a mountain plateau more than 2000 feet above the sea; and here, in sight of the Black Mountains and their many ambitious competitors, is located the pleasant, healthy, and hospitable village of Asheville, with some 2000 inhabitants, and the only mountain sanitarium in America. With three railroad lines attacking it from the east and one from

the west, Asheville still sleeps undisturbed by the locomotive's whistle, and the newsboys' cry of telegraphic extras. Ancestral stages jolt along its quiet streets, and are not the only institutions which remind the city-dweller that he has surrounded himself with the ancient customs and manners of our revolutionary sires. Presenting from every point the most captivating scenery, this charming village, 2250 feet above the ocean's level, looks down upon the famous French Broad, which ploughs its foaming way to the west through forty miles of rugged mountain gorges. Long noted for its agreeable climate* and great salubrity, consumption is almost unknown to its inhabitants, and therefore here has been established Dr. William Gleitsmann's "Mountain Sanitarium for Pulmonary Diseases." Having in 1875 spent ten pleasant days in this Sanitarium, I have felt it a duty to report the results.

Dr. Gleitsmann, a Bavarian by birth and professional education, is the proprietor and physician in charge. I found him a highly educated and sensible physician,† so forcibly impressed with the benefits to be conferred by such an institution on threatening consumption and its early stages, that he had invested his means largely in this enterprise; and yet, somewhat to my surprise, I did not find him to be either an enthusiast or

* NOTE ON THE CLIMATE OF ASHEVILLE.

Summary of E. J. Aston's Meteorological Observations of Temperature and Rainfall, for the eight years, 1867-1875.

Month.	Highest.	Lowest.	Mean.	Rainfall.	Month.	Highest.	Lowest.	Mean.	Rainfall.
January.....	67.	3.	37.3	2.4	July.....	90.	53.	71.9	4.6
February.....	69.	4.	38.9	4.4	August.....	88.	51.	70.9	4.8
March.....	73.	3.	44.8	3.8	September.....	86.	34.	64.	2.3
April.....	83.	30.	54.1	2.3	October.....	81.	24.	53.1	2.
May.....	86.	38.	61.5	4.	November.....	72.	7.	43.3	2.8
June.....	87.	54.	69.3	4.1	December.....	72.	-1.	37.3	2.7

"Mean temperature of Spring, 53.49; Summer, 70.72; Autumn, 53.48; Winter, 37.87. During the above period of eight years, the thermometer but twice reached above 88°, and but three times below 3°." The extreme range during the eight years was from the maximum 90° to the minimum—1°. The average annual mean of temperature was 53.9°, and of rainfall 40 inches. Situated at about 35° 30' latitude, Asheville has the summer temperature of St. Paul, Minn., 45°, and the winter temperature of Fayetteville, Ark., 36° of latitude.

† In an interesting article in the January No., 1876, of this Journal, on "Pneumatometry," by Dr. Schuppert, the author, referring to Waldenburg's Pneumatic Apparatus, says it is "an instrument which I herewith introduce into this country." Long prior to this announcement Dr. Gleitsmann had this instrument in daily use at his Sanitarium, as also the Spirometer, and all other modern pneumometers and instruments serviceable either in the diagnosis or treatment of pulmonary diseases.

narrow-minded specialist, but as modest and sensible as every man of true science and sound culture should be. More than a good physician—for to the amiability of a kind-hearted man he adds the gracious courtesies of a refined gentleman. To Dr. G.'s attention and skill as a physician, to his just and kindly consideration as a man, I have no hesitation in recommending any patients with confidence. He has by force of the law a mate, who, fortunately for him and suggestively to society, illustrates the design of the law, inasmuch as she is, in truth, his *help-mate*. Of German parentage and English education, Mrs. G. has no superior as the head of a household. While the scrupulous cleanliness, thorough ventilation and domestic comfort of her rooms, the cheerful aspect of her parlor, adorned with all the paraphernalia of social amusements, and the admirable discipline of her servants, aroused my admiration—this, three times daily when seated at her table, mounted to enthusiasm, and I fervently blessed the praiseworthy schooling which had rendered an educated lady an accomplished cook. My surprise was great to find, apparently buried in one of the unfrequented by-ways of this busy land, such a physician possessing such a helpmate and such a sanitarium. For sad experience had taught me to expect a pretentious specialist or quack (they are brothers), with as pretentious and more dirty surroundings. Truth permits me to say, gladly, that I am convinced that for those either threatened with or in the early stages of consumption, and especially for such of these as live in the malarial regions of the South—their best hope of prolonged life and renewed health will be in availing themselves of Dr. Gleitsmann's Sanitarium.

While there, I had daily intercourse with a half-dozen consumptive inmates, and satisfied myself that their unanimous report of decided improvement was not exaggerated. One was a young and intelligent physician, whose favorable experience was such, that he was investigating the relative altitude of the various southern mountain villages in search for a location which might possess the double advantage, suitability both for his business and his disease. Another patient from the South Carolina low lands had experienced great relief from distressing bronchial irritation, and great amelioration from suffering, though so far advanced in consumption that no hope was entertained of his

restoration to health. In a valley near to, and much lower than Asheville, old residents assured me that during their whole lives they had never heard of but two deaths by consumption, and that these two deaths were of a young brother and sister. Throughout this entire region the disease is rare. Forty miles southwest of Asheville is the mountain, Caesar's Head, 4000 feet above the sea, presenting with the Table Rock and other surroundings the grandest scenery I have ever witnessed out of Switzerland. On the summit of Caesar's Head is a comfortable summer inn; and its amiable and hospitable host is the intelligent physician, Dr. Miles, who resides and practices in Pickens, South Carolina. The doctor assured me that he had long been wasting away with bronchial and pulmonary symptoms, and had for several preceding years made Caesar's Head his summer home, on account of the great benefit to his disease. He is now as robust a specimen of physical vigor as the United States can produce. By him and others, I was assured that Asthma was unknown at Caesar's Head, and was always relieved when brought there. These are some of the special facts, which I have desired to add to the general ones previously stated, in justification of my own favorable opinion of the benefits to be derived by consumptives and asthmatics from this mountain region.

Another strong recommendation to the impoverished people of this section is, that nowhere else in the South can economy be so readily consulted. Good accommodation (not the very best, but the best the country affords) is furnished at from \$25 to \$40 per month, and these amounts secure greater comfort than many of our summer resorts afford at double and treble these sums. I regret that I am forced to warn those habituated to well-cooked meats, that he who would enjoy them in this as in other mountain regions, will be forced to exercise his utmost skill and tact. For the natives do not deem meat properly cooked until it approximates dried raw-hide soaked in a greasy gravy, and their devotion to and abuse of the barbarous frying-pan is well calculated to dry up the digestive juices of any well-fed Christian. But, let it be understood that Dr. G.'s Sanitarium is a blooming oasis in this desert of ill-cooked meats, that Mrs. G. is a grand mistress of the culinary art of civilization, and yet that, the comfortable rooms and appetizing table of the sanitarium are to be had at the habitual rates prevailing in

Asheville, viz., at from \$8 to \$10 per week. Dr. G.'s charges for medical services are so extremely moderate, that I cannot conceive that the very narrowest purse and conscience could invent just cause for dissatisfaction.

How are Asheville and the Sanitarium reached? By two main railroad routes, viz., by the "Piedmont Air Line Railway" on the east, which extends 547 miles from Atlanta, Ga., to Richmond, Va.; and by the E. Tenn., Va. and Ga. R.R., i. e., by so much of said road (130 miles) as extends from Knoxville to Bristol. On the former route there are three depots of consequence in this connection. First, travellers from the South should halt 158 miles beyond Atlanta at Greenville, S. C., where comfortable accommodation can be secured, as also good private conveyances, or daily stages over an excellent road, 60 miles to Asheville: at least one good halting place will be found en route, viz., at Hendersonville, 40 miles from Greenville and 20 miles to Asheville. Second, the traveller from the South may substitute for this 60 miles of good staging, 221 miles by rail and 25 miles of staging, by continuing on the Piedmont Railroad from Greenville, S. C., to Charlotte, N. C. (107 miles), and by then taking a branch railroad via Statesville to Old Fort (about 114 miles), at which terminus he will find 25 miles staging to Asheville. Third, the traveller from the North should take the Piedmont Railroad from Richmond to Salisbury, N. C. (238 miles), and from thence via Statesville to Old Fort, 114 miles, from whence 25 miles staging to Asheville. So much for the eastern route by the Piedmont Railroad.

The traveller, whether from the South or North, if not debilitated or disabled by disease, will find the most attractive but laborious route to Asheville to be via Morristown, Tenn., a dirty place, with hotel accommodation of such a nature that I shall never forget the wretched sensation of despondency which overwhelmed me when my weary body first sought needed rest there; and my weary brain was terrified by the thought that this savage place forewarned of grosser barbarisms in the unknown country beyond it. This wretched village, 40 miles from Knoxville and 90 from Bristol, has fortunately a branch railroad which quickly takes the disgusted traveller 40 miles away to its terminus, Wolf Creek. From thence there are good daily stages (Sundays excepted) to Asheville, 46 miles distant; and for 37

of these 46 miles the stage road runs by the bank of the enchanting French Broad. This wagon road is not good, and is likely to prove too exhausting to invalids, and very tedious to all not aroused to enthusiasm by the wildest mountain and river scenery in the eastern United States. By this route, via Morristown and Wolf Creek, with its 46 miles of tedious staging to Asheville, the great advantage is gained of having en route three convenient stopping places. Nine miles beyond Wolf Creek the stages halt, generally for the night, at the famous Warm Springs, where an excellent hotel furnishes good accommodation, and where many rheumatics, dyspeptics, and neuralgics successfully resort for relief. Sixteen miles beyond the Warm Springs is the beautifully located mountain village, Marshall, where accommodation, though not of desirable quality, can be procured. Beyond Marshall and within nine miles of Asheville, is Alexander's noted and extremely comfortable inn.

The reader should be informed that since the summer of 1875 work has been done on the various railroads verging towards Asheville, therefore he may find depots now nearer to it than those of Greenville, Old Fort, and Wolf Creek; and that the travelling expenses for one person to Asheville, by any route from such distant centres as New Orleans, St. Louis, and Boston, ought not to exceed \$50.

Having introduced my reader to the only American Mountain Sanitarium—having stated my reasons for strongly recommending it—having instructed him what to expect as to expense, accommodation and medical treatment, and by what mode of travel to get there—I have no duty left except to express my acknowledgements for many of the facts cited to Bordier's articles (1875) on *Climatotherapie*, in Gubler's *Journal de Therapeutique*; to Lombard's "*L'Immunité Phthisique*" (1871); to Williams' "*Leittsomian Lectures*" (1876); to Dr. Gleittsmann's "*Statistics of Mortality from Phthisis Pulmonalis*" (1875), "*Nature and Curability of Phthisis Pulmonalis*" (1874), "*Altitude and Climate in Phthisis Pulmonalis*" (1875); to Dr. S. E. Solly's "*Mineral Waters and Climate of Manitou*" (1875); to the *American Medical Journal of Science*, Oct., 1871, and Oct., 1875; to Grisolle's, Zeimssen's, and other well-known text books; to Parke's and Wilson's works on Hygiene; and finally to Maury's and other physical geographies.

